

# Financial Supervision in Central and Eastern Europe

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## **Abstract**

*The number of countries that are reviewing their financial supervisory structures is increasing year after year, the integrated agencies gaining popularity around the globe. Using a sample of 15 countries from Central and Eastern Europe, we find that the dependent variables taken into consideration (Gross Domestic Product, Harmonized Index of Consumer Prices, real effective exchange rate, banking assets, marketing capitalization, stock market turnover) have no significant effects on different types of supervisory integration. In addition, there aren't any differences in the impact of distinct types of financial supervision even if the country is already an EU member or a candidate country.*

*Keywords: financial supervision, financial system, logit model.*

*JEL codes: C21, G15, G32, O43*

## **1. Introduction**

Nowadays the financial system is much different from several decades ago, thus resulting drastic changes to the architecture of financial supervision. Factors that accelerate financial reforms are mainly technology, industry competition, increasing role of capital market, financial innovations, increasing complexity of financial activity, globalization progress and financial crises. Thus, all these changes on the one hand lead to new opportunities for investors, but on the other part to new systemic risks and financial instability. So, in order to make the financial system more stable, competitive and transparent, many states have followed that through these financial reforms to establish new supervision systems. In these circumstances, integrated supervision has gained popularity.

Despite the fact that the trend is that of an integrated surveillance, different countries involve different financial supervision models, so there is no single optimal model. This is due especially to history evolution, financial system structure, specific opportunities, political structure and traditions, country and financial sector size. Therefore, some integrated supervisory agencies cover all three main sectors, while some covers just two of these sectors. On the other hand there are integrated supervisory agencies that cover all the supervisory functions and there are some of them that cover only some supervisory functions. Also, some integrated supervisory agencies are located in the central bank, while others are independent of the latter. In the literature (e.g. Cihak and Podpiera, 2008) distinguish different types of supervisory arrangements, namely: full sectorial integration, which includes three sub-types: full sectorial and functional integration, Twin peaks and full sectorial, partial functional integration; partial sectorial integration, with three sub-types: integrated supervision of banks and insurance companies, integrated supervision of banks and securities markets and integrated supervision of insurance companies and securities markets; no sectorial integration.

The reasons for supporting integrated supervision are related to efficiency (unified standard setting and unified procedures, cost of supervision would be lowered, facilitate contacts by supervised entities), effectiveness, and the creation and rapid growth of financial conglomerates. On the other hand, in the literature (Wymeersch, 2006) were formulated different forms of criticism against the integrated supervisor model. Firstly, the integrated model serves the interest of the multi-service financial groups, but is of little interest to those firms that are not active in several lines of business, especially the smaller firms. Secondly, the remark is made that by integrating all financial supervision in the hand of one single body, the latter becomes too big, too unmanageable and too powerful.

Thirdly, an integrated supervisor has led some to fear moral hazard. Fourthly, there may even be some diseconomies of scale. Finally, if the objectives of the integrated supervisory agency are not clearly specified, it may be less effective than sectorial supervisory agencies.

The purpose of this paper is to analyze the impact of banking and capital market design in CEE countries with different financial supervision, given the changes of financial supervisory system. We conducted our research for several reasons. First, financial system stability is an important factor for economic growth and poverty reduction in emerging countries, and given the current crises it is important to analyze the structure of the institutions charged with the supervision of market operations since they have always evolved in response to crises. Second, all the analyzed countries are EU members or candidate members and are dealing with increasing integration of financial markets over the last years. Third, these countries have initiated financial reform projects and established new supervisory systems. Fourth, several states are dealing with the problems arising in post-socialist transition environments.

The main contribution of this paper is that it provides evidence on common characteristics of banking and capital market in countries with integrated supervision. The results can be directly linked to market developments and directly but not exclusively targeted to the integration of banking, securities and insurance business in EU.

Our findings suggest that there aren't significant differences on the main indicators of the financial system from the different types of financial supervision. Also there aren't any differences in the impact of distinct types of financial supervision even if the country is already an EU member or is a candidate state.

This paper is structured as follows. Section II consists of literature review, Section III describes briefly the history, types and changes of financial supervision in Central and Eastern Europe, Section IV explains the data and the methodology used, Section V discusses the empirical results and Section VI concludes.

## **2. Literature Review**

In the literature there are numerous studies that are subject to integrated supervision, focusing on the model adopted, on certain countries or comparison between them. Cihak and Podpiera (2008) found on a sample of 84 countries, that greater supervisory integration is associated with higher quality of insurance and securities supervision and greater consistency of supervision across sectors, supporting in this sense the "twin peaks" model. In addition, they found that whether supervision is located inside or outside the central bank has no significant relation to supervisory quality and found no evidence that supervisory integration brings costs reduction in terms of the number of employees in supervisory organizations. Further, Barth et al. (2002) found some evidence that a single supervisor system enhances bank performance Masciandaro (2004) emphasizes through a comparative analysis of 69 countries that an increase in the degree of concentration of supervisory powers is evident in the developed countries, and particularly in the EU. In addition he confirms a trade-off that emerges between the degree of financial sector unification and the role of the central bank. Pellegrina and Masciandaro (2008) obtained the fact that lower levels of corruption, better institutional governance, and more efficient judicial systems, are associated with the choice of a single supervisor of financial markets. Masciandaro (2009) highlights on which conditions the politicians prefer when implementing unified sector supervision outside the central bank. The same author shows in another article (2007), on a dataset of 89 countries that if the central bank involvement in supervision and its reputation are high, the unification level is likely to be low, and vice versa, confirming also the robustness of the central bank fragmentation effect. Damaestri and Guerrero (2005) argues that in the present circumstances, the net benefits of adopting an integrated approach of supervision probably exceed the net benefits stemming from the adoption of a specialized approach in Latin America and the Caribbean. In this sense, Monkiewicz (2007) argues that there are no ideal supervisory models and each jurisdiction has to find its own way. In doing so, it should always care for the preservation of the most critical properties of the supervisory system: its independence, accountability, transparency, integrity and market responsiveness.

Some approaches in the literature refer to comparisons between two or more models of integrated supervision in several countries. In this regard, Jung (2006) analyzes the change of financial

supervisory system in South Korea, compares it with Japanese experience, and concludes that the existence or lack of on-going public attention to dismantling the previous invested interests was regarded as one of the primary causes of different directions. Bebenroth et al. (2009) compare bank regulation and the integrated supervision in Japan and Germany arguing that bank regulation and supervision were less efficient in Japan than in Germany and that these differences were decisive for bank behavior.

In Asia, Kim and Lee (2006) conclude that the reform in financial supervision - and therefore the creation of an integrated supervisory agency - has had little to do with Korea's rapid economic recovery; this was more the result of the government's expansionary macroeconomic policies than the consequence of the changes it has made in the country's economic institutions. Siregar and James (2006) argues that the establishment of a single supervisory agency in Indonesia is wanted but will not automatically resolve the past problems associated with multiple supervisory agencies, in this sense being necessary to proceed with a much wider scope of economic, judicial and political reforms.

At EU level there are many studies that approach the integrated supervision. Quaglia (2008) compare three states in terms of financial supervision, highlighting that United Kingdom and Germany have a high number of financial conglomerates, they have a large number of international financial operators, and they host the two main financial centers in Europe and for these reasons it was higher the incentive in favor of a single supervisor. On the other side, in Italy, the financial system remains relatively segmented, with a limited number of international operators, the incentive in favor of a single supervisor being smaller. Herring and Carmassi (2008) analyzes the changes in supervision architecture emphasis on the integrated approach, and shows that crisis management by committee may not be an adequate substitute for the traditional model in which prudential supervision is combined within the central bank. In the same regard Wymeersch (2007) makes a comparative analysis of the features of supervision models giving indications about the drivers for choosing one of them and the pros and cons that have been advanced, describing the actual situation in each of the EU States. Prohaska (2006) argues that it would be possible and required to introduce a single supervising institution for all financial institutions on Croatian market after the financial market will become much more sophisticated, and after the supervision consolidation. In the same regard, Athanassiou (2006) states that in Cyprus is required to reform the financial system supervision and an integrated approach should be taken into account in future.

### **3. A brief review of financial supervision in Central and Eastern Europe**

In the last decades, changes in the European financial system such as deregulation, the introduction of euro, the internationalization of the financial markets, disintermediation, and rapid technological change, have implications in the supervision of financial institutions. In addition, the transition from socialism in most CEE countries has undergone major reform in the supervision system due to a favorable environment for opportunism, fraud, and corruption.

In this sense, in Europe, the creation of a single financial supervisor for the entire financial sector is as follows: Norway took the lead in 1986 followed by Iceland (1988) and five other European Union member states namely, Denmark (1988), Sweden (1991), United Kingdom (1997), Austria (2002), Germany (2002). Also, Herring and Carmassi (2008) affirms that the most influential reorganization took place in the United Kingdom, due to its role as a major international financial center. Damaestri and Guerrero (2005) concludes that in the case of the Scandinavian countries, the decisions to fully integrate financial regulation in a single institution were part of an evolutionary process, while in the recent cases the reform was implemented after holding a debate on the main advantages and costs of integration.

Begg (2009) analyzes the financial supervision in EU and underlines the fact that from a total of 27 countries, 14 have adopted a single financial regulator, as follows: the unified supervisor is separated from the central bank in 10 countries (Austria, Belgium, Denmark, Germany, Hungary, Latvia, Malta, Poland, Sweden, United Kingdom), while in the remain countries either the central bank is the single regulator (Czech Republic, Slovakia) or the single regulator is an agency of the central bank (Ireland) or an independent agency affiliated with the central bank (Estonia). The rest of the 13 states adopted the following financial supervision schemes: six adopted the sectoral approach (Cyprus, Greece, Lithuania, Romania, Slovenia, Spain), three introduced an integrated, sectoral model

(Bulgaria, Finland and Luxembourg), and three have combined regulation by sector with regulation by objectives (France, Italy and Portugal). Finally, the Netherlands follows the twin peaks model, with the central bank responsible for macro and micro prudential supervision. In the CEE countries, the agencies responsible for supervising the three sectors - banking, insurance and securities market - are presented in Table 1.

Table 1: Supervisory institutions in CEE

Country	Bank markets	Securities market	Insurance market
Austria	Austrian Financial Market Authority		
Bulgaria	Bulgarian National Bank	Financial Supervision Commission	
Croatia	Croatian National Bank	Croatian Agency for Supervision of Financial Services	
Czech Rep.	Czech National Bank		
Estonia	Finantsinspektsioon		
Greece	Bank of Greece	Capital Markets Commission	Directorate of Insurance undertakings and actuarial studies
Hungary	Hungarian Financial Supervisory Authority		
Latvia	Financial and Capital Markets Commission		
Lithuania	Bank of Lithuania	Lithuanian Securities Commission	Insurance Supervisory Commission of the Republic of Lithuania
Macedonia	National Bank of The Republic of Macedonia	Securities and Exchange Commission	Ministry of Finance
Poland	Polish Financial Supervision Authority		
Romania	National Bank of Romania	National Securities Commission	Insurance Supervisory Commission
Slovakia	National Bank of Slovakia		
Slovenia	Bank of Slovenia	Securities Market Agency	Insurance Supervisory Agency
Turkey	Banking Regulation and Supervision Agency	Capital Markets Board	Insurance Supervisory Office

Source: own elaboration from Wymeersch (2007), websites of respective national bodies.

Central and Eastern European countries have adopted a variety of supervisory structures, but they followed that by integrating the different types of supervision, the quality and effectiveness of supervisory activity to be improved.

#### 4. Data and Methodology

Good quality supervision is a key element of financial stability, but the issue is whether integrated supervision is closely linked with higher quality of supervision, the theoretical literature being unclear on this point. So, there is no uniformly accepted empirical definition of whether full integrated financial supervision means a higher quality of banking, insurance, and securities supervision. Therefore, we formulate our research hypothesis as follows: countries with full integrated supervision have a higher and more even quality of supervision across sectors in Central and Eastern Europe, referring to several explanatory variables, in particular the level of economic development. In the following, we provide an empirical examination of the hypothesis using data on a cross-section of 15 countries.

## 4.1 Data

We use data on supervisory structures from 15 economies from Central and Eastern Europe, namely: Austria, Bulgaria, Czech Republic, Croatia, Estonia, Greece, Hungary, Latvia, Lithuania, Republic of Macedonia, Poland, Romania, Slovakia, Slovenia and Turkey. In our model, the vector of explanatory variables consists of the six factors from the list of economic indicators, i.e. Gross Domestic Product at market prices unit – millions of euro at prices of the previous year), Harmonized Index of Consumer Prices (2005=100) – average index and rate of change, real effective exchange rate (1999=100 deflator: consumer price indices - 41 trading partners), banking assets/GDP, and when we calculated this indicator we took into consideration: credit to monetary financial institutions granted by monetary financial institutions, loans to total residents granted by monetary financial institutions (non-consolidated), loans to total residents granted by monetary financial institutions (consolidated), holdings of securities issued by total residents (non-consolidated), holdings of securities issued by total residents (consolidated), external assets and credit to monetary financial institutions granted by monetary financial institutions, market capitalization/GDP, stock market turnover/GDP.

We chose to apply this model on CEE Region, which consists in EU members and candidate countries to EU (Turkey, Croatia and Republic of Macedonia) because we want to underline the differences between these two types from the point of financial supervisory regime. Other reasons for why we selected these countries are the common political characteristics of some, i.e. the communist regime or the same European directives that regulate the financial sector, and also the geographical proximity.

Our contribution to the literature consists in selected several new indicators comparing with previous studies, namely we chose in addition 3 indicators: Banking assets/GDP, market capitalization/GDP, stock market turnover/GDP. We took this form of indicators because they are relevant in underlining the impact of increase or decrease of the financial segments reported to the degree of economic development of the respective state, and so we can highlight the relative relation between different arrangement of financial supervision and the evolution of the analyzed segment.

## 4.2 Methodology

Since our dependent variable is a binary variable (0=fully integrated financial supervision and 1=all others, and the same for the other types of supervision) we use the logit model. Two popular versions are the probit and the logit model, and since in practice the predicted probabilities differ only slightly and the second one it is easier to use computationally than the first one, we opt for the logit model. The logit model is specified as:

$$P = F(Z) = \frac{1}{1+e^{-Z}} = \frac{1}{1+e^{-(\alpha+\beta X)}} \quad (1)$$

where  $P$  is the probability that  $Z$  takes the value 1 and  $F$  is the cumulative logistic probability function,  $X$  is the set of regressors and  $\alpha$  and  $\beta$  and are parameters. It can be shown that the regression equation is equal to:

$$\ln\left(\frac{P}{1-P}\right) = Z = \alpha + \beta X \quad (2)$$

We estimate a binomial logit model using a set of determinants of degree of development of financial system in order to answer the question of what probability different supervisory regimes have an impact on the economic indicators in Central and Eastern Europe.

## 5. Empirical results

There are four qualitative characteristics of supervisory regimes that we decided not to consider in constructing the model: the legal nature public or private of the supervisory institution nor their relationship to the political system, the degree of independence, the level of accountability and the implication of the central bank in supervising the financial sector, because the studies made by

now had as final results the strong connection between the last mentioned. Therefore Masciandaro (2007) considers that a given policymaker's choice on supervision unification level will depend on the role the central bank plays in the supervision, or the role the policymaker has decided to assign to the central bank. If the role of the central bank is limited, the supervision concentration level will probably be high and vice versa. At this stage of analysis, we prefer to consider just the number of the agencies involved in the supervisory authorities. In 2009, Masciandaro analyzing under which conditions the politicians prefer to implement unified sector supervision outside the central bank concludes that at European level the establishment of a single financial authority is less likely to occur with the presence of a European central bank deeply involved in supervision. Conversely, the less the European Central Bank is involved in the financial supervision architecture, the more likely the establishment of a European Single Financial Authority will be. Moreover we did not consider who is involved in the management of the deposit insurance schemes. In general, we consider only the three traditional sectors (banking, securities and insurance markets) that have been the subject of supervision. Finally, the financial authorities may perform different functions in the regulatory as well as in the supervisory area. However, at this stage of the institutional analysis, we consider only the number of the agencies involved in the supervisory activities. We consider that the dependent variable i.e. financial supervision unification is representative, in this case, considering only the supervisory activities without regulatory ones.

The increase of public policy debates about institutional structure of regulation and supervision indicates that a certain unease about prevailing structures. International experience indicates a wide variety of institutional regulatory formats which suggests there is no universal ideal model considers Llewellyn (2005). In the same direction, our results presented in Table 2 allow a number of conclusions.

Table 2: Estimation results of the binomial logit model

Variable	Coefficient			Prob.		
	Full integrated	Partial integrated	Sectoral	Full integrated	Partial integrated	Sectoral
Banking assets/GDP	0.221145	2.516064	-0.708764	0.6632	0.6449	0.2094
Exchange rate	0.047702	0.057396	-0.116488	0.3042	0.4279	0.1628
GDP	5.20E-06	-7.63E-05	1.17E-05	0.6072	0.3804	0.2325
HICP	-0.047209	-0.062771	0.112729	0.3137	0.3841	0.1579
Market Capitalization/GDP	-3.399826	-2.709357	-4.239119	0.6447	0.8375	0.4671
Stock market turnover/GDP	-1.565161	18.97295	-1.335137	0.7862	0.4143	0.8106

Source: author's calculations

We classified the supervisory regimes trying to underline the differences between them by number of the institutions involved: full integrated (single supervisor), partial integrated (at least one authority monitor for more than one sector) and sectoral (separate authorities for each sector, at least one per sector). After this classification, we analyzed if the impact of different supervisory systems is significant for the six representative variables that we selected for the model, and we highlighted that none of the dependent variables influences the independent one. So, the null hypothesis isn't rejected since, no variable isn't statistically significant, meaning that the supervision arrangements have no significant effect on any factor from the list. The rejection of the hypothesis comes somewhat in contradiction with the general impression on the link between the type of supervision and the development level of the financial system from a country. This result supports previous studies such as that of Cihak and Podpiera (2008) who emphasized that relation between the level of economic development and the integrated supervision is not statistically significant, the study of Masciandaro (2009) who outlined that wealth features of each country are insignificant, traditional market-based versus bank-based index shows no relationship with the choice of the supervisory model and that the development of the financial markets, measured by the level of market capitalization, and the size of the banking system, measured by the asset dimension is also insignificant. In contrast, Freytag and

Masciandro (2005) find that the lower the overall economic size (measured either by GDP or population), the higher the probability of integration.

## 6. Conclusions

The objective of this paper has been to analyze how the type of financial supervision regime influences important indicators from the financial system, i.e. Gross Domestic Product, Harmonized Index of Consumer Prices, real effective exchange rate, banking assets, market capitalization, and stock market turnover. The results are included in the trend of literature that analyzed this type of connection, the supervisory function is being performed by a variety of institutions, but indifferently who is supervising the financial sector one, two, three institutions there is no significant influence on banking sector, capital market or financial system as a whole. From our point of view this underlines the fact that changing the structure of the financial system does not guarantee better supervision or better indicators and the end of the year. Better supervision comes from stronger regulations, non-political implications and non-profit influences. The emergence of the supervision authorities, the case for unified institutions helped to have a more unified vision on the financial sector, and as revealed by Cihak and Podpiera (2008), fully integrated supervisory agencies tend to be characterized by better quality of supervision than other supervisory agencies. But all the countries have to accept that they couldn't have a perfect institutional structure and the political influences and not only have to be reduced. We think that is more important to accept that the institutional structure is not perfect and try to improve the regulations, than to try to change the structure of the supervisory institutions.

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